

VI. WHAT IS CLAIMED

1. A computer-implemented method for generating graphical surface map visualizations from a set of data records, comprising the steps of:
 - receiving a plurality of data records;
 - creating vector representations of said data records;
 - enabling the user to select from a first surface map generation method and a second surface map generation method;
 - generating a first surface map representation corresponding to said vector representations in response to selection of said first surface map generation method; and
 - generating a second surface map representation corresponding to said vector representations in response to selection of said second surface map generation method.
2. The method of claim 1 wherein said first and second surface map representation calculate the peak height of surface peak by different methods.
3. The method of claim 2 wherein said first surface map generation method comprises calculating the peak height based on a variable parameter.
4. The method of claim 3 wherein said variable parameter is chosen from a user-defined list.
5. The method of claim 4 wherein said variable parameter is based on the frequency of occurrence of a term from said data records.
6. The method of claim 3 wherein said variable parameter is automatically calculated.

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7. The method of claim 1 wherein said second surface map generation method comprises calculating said peak height based on the aggregate value of variable parameters.

5 8. The method of claim 6 wherein said variable parameter is based on the frequency of occurrence of a term from said data records.

9 9. The method of claim 1 wherein said second surface map generation method comprises calculating said peak height based on the aggregate value of variable parameters.

10 10. The method of claim 1 wherein a first and second surface map are generated, and further comprising enabling a user to switch between the first and second surface map to determine the influence of the first and second surface map generation methods on said data records.

11 11. The method of claim 10 wherein said step of enabling a user to switch comprises enabling a user see a morphed transition between surface maps when the user chooses to view a different surface map.

12 12. The method of claim 1 wherein said step of creating vector representations includes generating a two-dimensional vector representation of said data records; generating a two-dimensional map representation of said data records based on said two-dimensional vector representation; and superimposing said two-dimensional map representation on either said first or second surface map representation.

20 13. A computer-implemented method for generating graphical landscape map visualizations from a set of data records, comprising the steps of:

receiving a plurality of data records;
creating vector representations of said data records;
generating a surface map representation of said data records corresponding
to said vector representations;
5 generating a two-dimensional map representation of said data records based
on said vector representations; and
superimposing said two-dimensional map representation on said surface
map representation.

14. The method of claim 13 wherein said two-dimensional map
representation is a galaxy view.
15. The method of claim 14 wherein said surface map is a landscape map.
16. The method of claim 15 wherein said landscape map representation is a
concept landscape visualization.
17. A computer-implemented method for generating graphical surface map
visualizations from a set of data records, comprising the steps of:

receiving a plurality of data records containing text information;
creating vector representations of said data records;
generating a first surface map representation of said data records
corresponding to said vector representations; and
20 associating and displaying labels in connection with selected peaks of said
surface map, wherein a label represents a significant term of the data records
associated with the selected peak.

18. The method of claim 17 further comprising providing the user with the option to display or remove display of said labels associated with peaks of the first surface map.

5 19. The method of claim 18 further comprising enabling a user to provide a custom label to replace a selected label of said labels, and replacing the selected label with the custom label on said first surface map in response to a user request.

10 20. The method of claim 17 further comprising the steps of:
receiving a substitute term to be substituted for two or more selected significant terms of the data records; and

15 generating a second surface map representation based on the substitute term occurring at the data record locations of the selected significant terms.

21. A computer-implemented method for generating graphical surface map visualizations from a set of data records, comprising the steps of:

receiving a plurality of data records containing a plurality of terms;
generating a first surface map representation of said data records corresponding to the significance of the terms in the data records;
enabling a user to define at least two of said terms as equivalent terms; and
generating a second surface map representation of said data records based on the significance of the defined equivalent terms.

20 22. The method of claim 21 wherein a term may include a group of text units.

23. The method of claim 22 wherein the text units are words.

24. A computer-implemented method for generating graphical surface map visualizations from a set of data records, comprising the steps of:

receiving a plurality of data records containing a plurality of original terms;

5 receiving a first substitute term to be substituted for a first set of original terms of the data records; and

generating a surface map representation based on the first substitute term occurring at the data record locations of the first set of original terms.

25. The method of claim 24 wherein a term may include a group of text units.

26. The method of claim 25 wherein the text units are words.

27. The method of claim 24 further comprising:

receiving a second substitute term to be substituted for a second set of original terms of the data records; and

wherein said surface map representation is based on the first substitute term occurring at the data record locations of the first set of original terms and the second substitute term occurring at the data record locations of the second set of original terms.

28. The method of claim 24 wherein a topicality value is computed based on the substitute term and wherein the step of generating the second surface map is based on the topicality value.

29. A computer-implemented method for generating graphical surface map visualizations from a set of data records, comprising the steps of:

receiving a plurality of data records containing a plurality of terms;

generating a first surface map representation of said data records corresponding to the significance of the terms in the data records;

receiving a substitute term to be substituted for two or more selected terms of the data records; and

5 generating a second surface map representation based on the substitute term occurring at the data record locations of the selected terms.

30. The method of claim 29 wherein a term may include a group of text units.

31. The method of claim 30 wherein the text units are words.

32. The method of claim 29 wherein a topicality value is computed based on the substitute term and wherein the step of generating the second surface map is based on the topicality value.

33. A computer-implemented method for presenting graphics based on surface map visualizations from a set of data records, comprising the steps of:

generating a surface map representation of data records corresponding to the significance of the terms in the data records;

receiving a user command to display information associated with a certain region of the surface map;

in response said step of receiving, retrieving terms associated with the region and a numerical value associated with each term, where the value associated with each retrieved term represents the proportion of entire region that the retrieved term represents;

20 generating a chart that displays the name of retrieved terms; and

associating displayed terms with a segment of the chart that represents the displayed term, wherein the size of each segment of the chart is proportional to the term's representation in the region.

34. The method of claim 33 wherein the displayed term is displayed in
5 proximity to the corresponding segment.

35. The method of claim 33 where the term's representation is based on the frequency of occurrence of the term in the region.

36. The method of claim 33 wherein the region is represented by a peak of the surface map.

37. The method of claim 33 wherein the chart is a bar chart.

38. The method of claim 37 wherein the segments are presented in decreasing order of magnitude of the value.

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